Pro-face®

HVS
PRECONISATEUR DE SOLUTIONS DEPUIS 1985
2 rue René Laennec 51500 Taissy France
Fax: 03 26 85 19 08, Tel : 03 26 82 49 29
E-mail:hvssystem@hvssystem.com
Site web : www.hvssystem.com

Graphic Logic Controller

LT3000 SERIES

Introducing a new approach to "the logic controller"

-The Hybrid Display

CANopen
(Network Standard)

CANopen

Using the LT unit as a master, you can communicate over a CANopen network.

CONTROL OPERATION DISPLAY

Controllers that combine display and operations.

Introducing the "New Thinking" LT3000 Series controller and display.

5.7" QVGA

Feature Rich 5.7" displays with scalable I/O

LT-3300S/L
STN Color 4,096 colors / Monochrome 16 shades | DIO 32 points | 3 Expansion Slots | USB | SIO | Ethernet

LT-3301L
Monochrome 16 shades | DIO 32 points | 3 Expansion Slots | USB | SIO

Useful — Up to 80 I/O Points
32 built-in I/O points are standard. These can be used for special I/O such as pulse outputs. By adding 3 EX modules, you can have up to 80 points.

Expandable — CANopen (Network Standard)
EN50325-4 Network Standard. LT3000 supports CANopen. Using the LT as a master, you can connect to I/O equipment on the CANopen network. See our support site for recommendation slave units.

Ease of Use — USB / Ethernet Ports and Data Collection
The USB port comes standard. This enables using USB memory to collect and transmit screen and production data with ease. Real-time collection and management of production data is possible over the network.

Brilliant — Full Graphics Displays in Beautiful Color
In addition to the monochrome display, you can use the 4,096 color STN model. Its 5.7" screen allows you to fully express your images in brilliant colors.

Effortless — Reduced Development Time
You can program ladder logic, draw the screen interface, and set up communication, all in a single application. Even for the beginner developers the program is easy to use, as it utilizes drag and drop operations for drawing and setting up.

Color and monochrome models.

3.8" QVGA

Palm-sized 3.8" display

LT-3201A
Monochrome 8 shades | DIO18 Points | 2 Expansion Slots | USB

Useful — Up To 50 I/O Connections
Offers compact size with 18 built-in I/O points. This can be used for special I/O such as pulse outputs. By adding 2 EX modules, you can have up to 50 points.

Expandable — CANopen (Network Standard)
EN50325-4 Network Standard. LT3000 supports CANopen. Using the LT as a master, you can connect to I/O equipment on the CANopen network. See our support site for recommendation slave units.

Ease of Use — USB Port and Data Collection
The USB port comes standard. This enables using USB memory to collect and transmit screen and production data with ease.

Brilliant — Full Graphics in a Compact Display
Even though the screen is small, do not limit yourself to text. You can display graphics and images beautifully on the screen. The backlight also allows you to switch between amber and red to indicate alarms and other conditions.

Effortless — Reduce Development Time
Program your ladder logic, user interface and communication settings all in a single application. Even for the beginner developer's programming is easy, as it uses convenient drag and drop fordrawing and configuration.

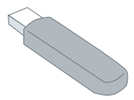
Switches between amber and red.

Product Name	Controller					Display						Product Name
	Built-in DIO	Special I/O * Uses built-in DIO s four points.	Expansion Units * Exclusive use only: EX Modules	Expansion Units * Exclusive use only: CANopen	Controller Memory	Serial Port	USB (host) Port	Ethernet Port	Display Type	Resolution	Display Size	
LT-3300S	32 points Inputs: 16 Outputs: 16	Pulse Output Max.65kHz Counter Input Max.100kHz	3 EX Modules Max. Up to 48 Inputs / Outputs	63 Stations Bit Inputs / Outputs : 1024 Integer Inputs / Outputs : 256	FLASH EPROM 132KB Equivalent to 15,000 Steps (Up to 60,000 Steps)	○	○	○	4,096 STN Colors	QVGA 320×240 Pixels	5.7"	LT-3300S
LT-3300L									Monochrome 16 Shades			LT-3300L
LT-3301L								—				LT-3301L
LT-3201A	18 points Inputs: 12 Outputs: 6		2 EX Modules Max. Up to 32 Inputs / Outputs			—		—	Monochrome 8 Shades (Amber / Red)		3.8"	LT-3201A

Expandable

Reduce Equipment Space While Expanding Capabilities

USB



Handle data in the field without a PC

With a USB memory stick, you can update screens, retrieve production data, as well as change passwords and labels.

Possible because 5.7" model connects.

Ethernet

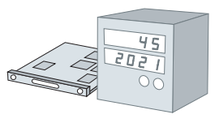
Serial (RS-232C / 422 / 485)

With LT-3300S/L

Manage production data in real-time

Using a PC you can set up accurate and efficient production controls, such as automating work instructions or collecting real-time production data.

Data management software Pro-Server EX



With LT-3300S/L and LT-3301L

Direct connections to temperature controllers without a PC

Previously, a PLC was needed to connect to a temperature controller. With the 5.7" model, use the serial interface to connect to a temperature controller or other types of boards, thereby reducing your overall equipment cost.

EX Modules / CANopen Master Unit

DIO

Enhanced Control Features for a Variety of Devices

IN Built-in DIO, EX Modules, CANopen
[DC, High-Speed Counter, Pulse Catch inputs]
[DC, Analog, Temperature inputs]
[Connect to CANopen-supported slave units]

Limit Switch / Encoder / Sensor / Emergency Button / Thermometer *EX modules only

OUT Built-in DIO, EX modules, CANopen
[Transistor, Pulse, PWM outputs]
[Transistor, Relay, Analog outputs]
[Connect to CANopen-supported slave units]

Pump / Solenoid Valve / Stepping Motor / Motor Drive / Flow Rate / Pressure *EX modules only

Check logic operations without a PC

Logic Monitor
Display the whole ladder program.
You can check the operation status and logic program.

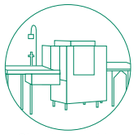
Address Monitor
Displays addresses used in the ladder program.
Displays variables and their current values.

More ! Simple programming enables you to cut work hours. For details, see P.05

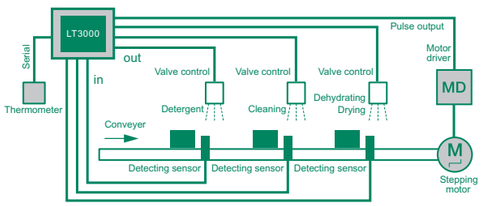
Still relying on PLCs, switches and lamps? With just the LT3000 Series you can do all this and more.

65 kHz Pulse Output (Standard feature)

Control the speed of a conveyor with a stepping motor. Connect directly to a temperature controller using serial communication to eliminate the need for a PLC.



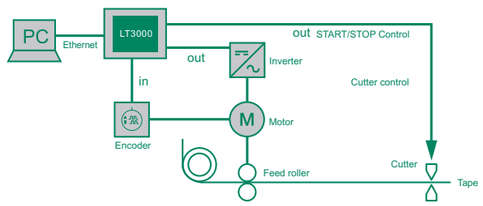
Cleaning machine

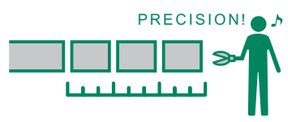


100 kHz High-Speed Counter (Standard feature)

Control an inverter by entering positional information with an encoder. Gather real-time production information and control with precision.

Packing machine

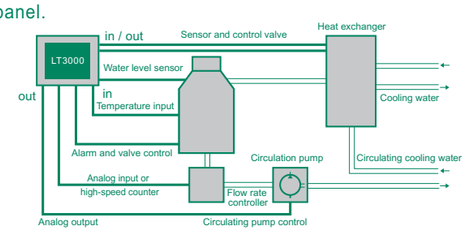


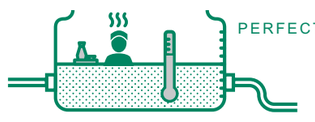


Analog Input / Output (EX Module)

Control the flow to a tank or its temperature with analog I/O and temperature inputs. Even with reduced space,interactive operation is improved with the touch panel.

Coolant Circulator

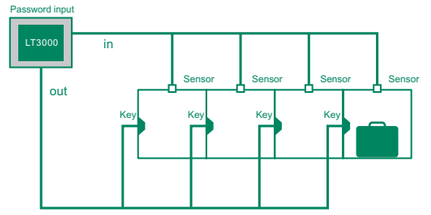


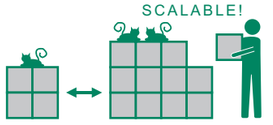


DIO Expansion Module (EX Module)

Expansion modules enable adding I/O as the number of lockers increases. Of course, with password keys you can lock and unlock lockers.

Delivery lockers



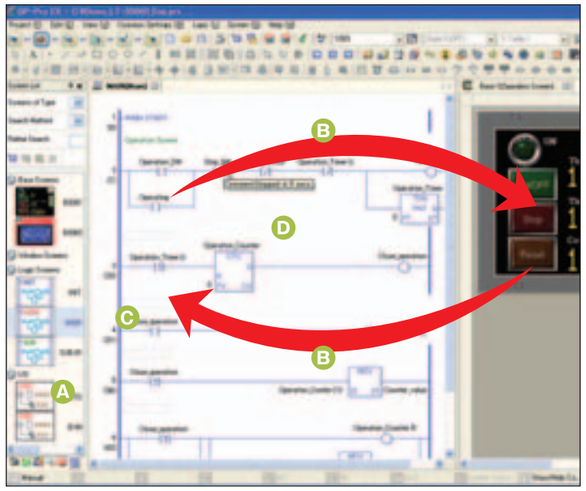


Screen Editor

GP-Pro EX

Logic programming and HMI drawing all in one software reduces development time.

Added functionality to coordinate logic program and HMI development. Drag and drop parts or instructions between the logic and drawing editors to map symbols/variables to newly created instructions or parts. This coordination between the editors allows for efficient development of your HMI screens and logic programs, thereby reducing time of development.



Editing made easy!

Define PLC / Device Addresses

You can use device addresses of connected equipment directly in the logic program. This simplifies interlock and other features.

A Subroutine Blocks

You can set up the initialization logic, main logic, and subroutines as blocks so that editing proceeds smoothly.

B Drag and Drop

Drag and drop between the drawing and logic screens.

C Number of Steps

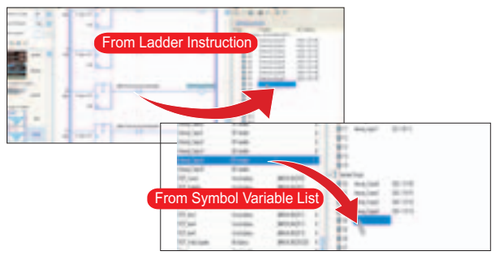
The program size is made obvious by displaying the number of steps. Normal capacity is 15,000 steps. By using the program area, you can increase this to 60,000 steps. However, this reduces the screen data capacity to 1 MB.

D Displaying Comments

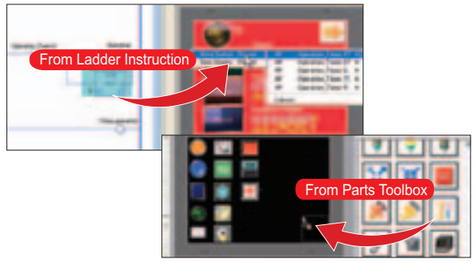
Popping up comments as tool tips makes the logic easy to follow. Optionally, you can choose to display comments all the time.

"Drag and Drop" For Easy Settings

Mapping I/O with Drag and Drop



Drawing a switch / lamp on the screen



Useful Features For Reducing Costs

GP-Pro EX Simulation

Without transferring data to the LT unit, you can debug the screen data and logic program on your PC. Entering device address values, you can simulate the environment of external devices.

Alarm Log

When an alarm is triggered, its associated alarm message and register value are collected. You can choose to investigate the cause of the alarm right away, or save the information to a CSV file and analyze the information later on the PC.

Project Converter

When working with LT-330*S/L units, you can convert LogiTouch screen data and logic programs (built-in DIO) created in C-Package. This feature enables you to re-use previous assets.

* There is a limit to the amount of compatibility. Please speak to a sales contact or visit our homepage for details.

Operation Log

Record operation information such as "Who", "When", and "How", so this information can be used to investigate the origin of any errors.

Historical Graph

Displays data collected over time in a graph. You can specify the time to jump to a particular location in the graph, or simply scroll to view past data.

Online Edit

Even while the logic program is running, you can edit the logic without stopping it.
Available Editing Features
- Insert or delete rungs, instructions, labels and rows
- Edit operands

[Instruction Notation List]

Basic Instruction

Bit Basic

Normally Open	NO	⊣ ⊢
Normally Closed	NC	⊣/⊢
Out	OUT	—◯—
Negative Out	OUTN	—⊘—
Set	SET	—Ⓢ—
Reset	RST	—Ⓡ—

Pulse Basic

Positive Transition	PT	⊣↑⊢
Negative Transition	NT	⊣↓⊢

Program Control

Jump	JMP <*P>	—≫LABEL NAME
Jump to Subroutine	JSR <*P>	→SUBROUTINE NAME←
Return	RET	RET
Repeat number of times (For)	FOR	FOR S1
Repeat number of times (NEXT)	NEXT	NEXT
Inverse	INV	—/—
Exit	EXIT	EXIT
Power Bar Control	PBC	PBC S1 D1
Power Bar Reset	PBR	PBR S1
Logic Wait Instruction	LWA	LWA S1

Timer Instruction

On Delay Timer	TON	TON (ms) Q PT ET
Off Delay Timer	TOF	TOF (ms) Q PT ET
Pulse Timer	TP	TP (ms) Q PT ET
Accumulate On Delay Timer	TONA	TONA (ms) Q R PT ET
Accumulate Off Delay Timer	TOFA	TOFA (ms) Q R PT ET

Counter Instruction

Up Counter	CTU <*P>	CTU Q R PV CV
Down Counter	CTD <*P>	CTD Q R PV CV
Up/Down Counter	CTUD <*P>	CTUD Q UP QV R QD PV CV

R/W Instruction

Time Read/Write

Time Read	JRD <*P>	JRD D1
Time Set	JSET <*P>	JSET S1 D1

Date Read/Write

Date Read	NRD <*P>	NRD D1
Date Set	NSET <*P>	NSET S1 D1

Operation Instruction

Arithmetic Operation

Add	ADD <*P>	ADD S1 D1 S2
Subtract	SUB <*P>	SUB S1 D1 S2
Multiplication	MUL <*P>	MUL S1 D1 S2
Division	DIV <*P>	DIV S1 D1 S2
Modulation	MOD <*P>	MOD S1 D1 S2
Increment	INC <*P>	INC D1
Decrement	DEC <*P>	DEC D1

Time Operation

Time Addition	JADD <*P>	JADD S1 D1 S2
Time Subtraction	JSUB <*P>	JSUB S1 D1 S2

Logical Operation

Logical AND	AND <*P>	AND S1 D1 S2
Logical OR	OR <*P>	OR S1 D1 S2
Logical XOR	XOR <*P>	XOR S1 D1 S2
Logical NOT	NOT <*P>	NOT S1 S2

Transfer

Move (Copy)	MOV <*P>	MOV S1 D1
Block Move (Block Copy)	BLMV <*P>	BLMV S1 D1 S2
Fill Move	FLMV <*P>	FLMV S1 D1 S2
Exchange	XCH <*P>	XCH D1 D2

Shift

Shift Left	SHL <*P>	SHL S1 D1 S2
Shift Right	SHR <*P>	SHR S1 D1 S2
Arithmetic Shift Left	SAL <*P>	SAL S1 D1 S2
Arithmetic Shift Right	SAR <*P>	SAR S1 D1 S2

Rotation

Rotate Left	ROL <*P>	ROL S1 D1 S2
Rotate Right	ROR <*P>	ROR S1 D1 S2
Rotate Left with Carry Over	RCL <*P>	RCL S1 D1 S2
Rotate Right with Carry Over	RCR <*P>	RCR S1 D1 S2

Function Instruction

Calculate Function

Sum	SUM <*P>	SUM S1 D1 S2
Average	AVE <*P>	AVE S1 D1 S2
Square Root	SQRT <*P>	SQRT S1 D1

Function Instruction

Calculate Function

Bit Conut	BCNT <*P>	BCNT S1 D1
PID	PID	PID S1 D1 S2 S3

Trigonometric Function

Sine	SIN <*P>	SIN S1 D1
Cosine	COS <*P>	COS S1 D1
Tangent	TAN <*P>	TAN S1 D1
Arc Sine	ASIN <*P>	ASIN S1 D1
Arc Cosine	ACOS <*P>	ACOS S1 D1
Arc Tangent	ATAN <*P>	ATAN S1 D1
Cotangent	COT <*P>	COT S1 D1

The other Function

Exponential	EXP <*P>	EXP S1 D1
Logarithm	LN <*P>	LN S1 D1
Log Base 10	LG10 <*P>	LG10 S1 D1

Compare Instruction

Arithmetic Compare

Equal	EQ	EQ (=) S1 S2
Greater Than	GT	GT (>) S1 S2
Greater Than Or Equal To	GE	GE (>=) S1 S2
Less Than	LT	LT (<) S1 S2
Less Than Or Equal To	LE	LE (<=) S1 S2
Not Equal	NE	NE (<>) S1 S2

Time Compare

Time Compare Equal	JEQ	JEQ (=) S1 S2
Time Compare Greater Than	JGT	JGT (>) S1 S2
Time Compare Greater Than Or Equal To	JGE	JGE (>=) S1 S2
Time Compare Less Than	JLT	JLT (<) S1 S2
Time Compare Less Than Or Equal To	JLE	JLE (<=) S1 S2
Time Compare Not Equal	JNE	JNE (<>) S1 S2

Date Compare

Date Compare Equal	NEQ	NEQ (=) S1 S2
Date Compare Greater Than	NGT	NGT (>) S1 S2
Date Compare Greater Than Or Equal To	NGE	NGE (>=) S1 S2
Date Compare Less Than	NLT	NLT (<) S1 S2

Compare Instruction

Date Compare

Date Compare Less Than Or Equal To	NLE	NLE (<=) S1 S2
Date Compare Not Equal	NNE	NNE (<>) S1 S2

Convert Instruction

Data Convert

BCD Convert	BCD <*P>	BCD S1 D1
BIN Convert	BIN <*P>	BIN S1 D1
Encode	ENCO <*P>	ENCO S1 D1
Decode	DECO <*P>	DECO S1 D1
Convert to Radian	RAD <*P>	RAD S1 D1
Degree Convert	DEG <*P>	DEG S1 D1
Scale	SCL <*P>	SCL S1 D1

Type Convert

Convert Integer to Float	I2F <*P>	I2F S1 D1
Convert Integer to Real	I2R <*P>	I2R S1 D1
Convert Float to Integer	F2I <*P>	F2I S1 D1
Convert Float to Real	F2R <*P>	F2R S1 D1
Convert Real to Integer	R2I <*P>	R2I S1 D1
Convert Real to Float	R2F <*P>	R2F S1 D1
Convert Seconds	H2S <*P>	H2S S1 D1
Convert Seconds to Time	S2H <*P>	S2H S1 D1

※Instructions with <*P> correspond to positive transition instructions (differential transition). By adding P to the end of each instruction notation (LMP, etc.), you can use the instruction as a positive transition instruction (e.g., JMPP, JSRP, etc.).

Instructions for I/O driver

STD driver

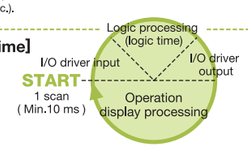
Instructions for making changes to pulse output parameters	PLSX	PLSX (CH1) D1
Instructions for making changes to acceleration/ deceleration pulse	PLSY	PLSY (CH1) D1
Instructions for retrieving pulse output parameters	PLSG	PLSG (CH1) D1
Instructions for starting pulse output	PLS	PLS (CH1) D1
Instructions for stopping pulse output	PLSQ	PLSQ (CH1) D1
Instructions for making changes to PWM output parameters	PWMX	PWMX (CH1) D1
Instructions for retrieving PWM output parameters	PWMG	PWMG (CH1) D1
Instructions for starting PWM output	PWM	PWM (CH1) D1
Instructions for stopping PWM output	PWMQ	PWMQ (CH1) D1
Instructions for making changes to high-speed counter parameters	HSCX	HSCX (CH1) D1
Instructions for retrieving high-speed counter parameters	HSCG	HSCG (CH1) D1
Instructions for starting high-speed counter	HSC	HSC (CH1) D1
Instructions for stopping high-speed counter	HSCQ	HSCQ (CH1) D1
Instructions for verifying "pulse catch" input	PCH	PCH (CH1) D1
Instructions for clearing "pulse catch" input	PCHQ	PCHQ (CH1) D1

CANopen driver

SDO reading	SDOR	SDOR (CAN) S1 D1 S2 S3
SDO writing	SDOW	SDOW (CAN) S1 D1 S2 S3
Master check	DGMT	DGMT (CAN) D1 D2
Slave check	DGSL	DGSL (CAN) S1 D1

[How to think scan time]

Scan times are composed of a logic program with time for operation and display added because operation/display and logic processing are executed simultaneously by one CPU.
※Including scan time error 10%.



Addresses that are automatically allocated to the devices within GP-Pro EX

Type	Address (Addressing Method)
Bit variable	X0000~X0511
	Y0000~Y0511
	M0000~M7999
Integer variable	I0000~I0127
	Q0000~Q0127
	D0000~D7999
Float variable	F0000~F0127
Real variable	R0000~R0127
Timer variable	T0000~T0511
Counter variable	C0000~C0511
Date variable	N0000~N0063
Time variable	J0000~J0063
PID variable	U0000~U0007

5.7" QVGA

LT-3300S/L

STN Color	Sink Output	Ethernet	Model：LT3300-S1-D24-K
STN Color	Source Output	Ethernet	Model：LT3300-S1-D24-C
Monochrome	Sink Output	Ethernet	Model：LT3300-L1-D24-K
Monochrome	Source Output	Ethernet	Model：LT3300-L1-D24-C

LT-3301L

Monochrome	Sink Output	Model：LT3301-L1-D24-K
Monochrome	Source Output	Model：LT3301-L1-D24-C

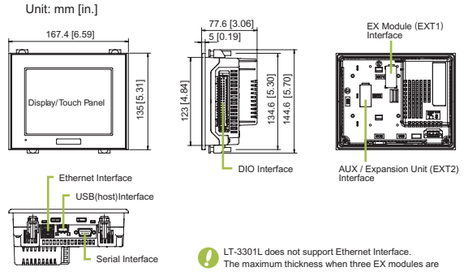
Performance Specifications		LT-3300S	LT-3300L	LT-3301L
Display Type		STN Color LCD	Monochrome LCD	
Display Colors/Shades		4,096 colors (3-speed blink)	Black and White (16 shades) (3-speed blink)	
Backlight		White LED (When replacement is required, contact your local distributor.)		
Display Resolution		W320 × H240 pixels (QVGA)		
Effective Display Area		W117.2 [4.61] × H88.4mm [3.48in.]		
Brightness Control		8 levels of adjustment available via touch panel		
Contrast Adjustment		8 levels of adjustment available via touch panel		
Language Fonts		Japanese: 6,962 (JIS Standards 1 & 2 including 607 non-kanji characters) ANK:158 *1		
Character Sizes		Standard font: 8×8, 8×16, 16×16, 32×32 dot fonts Stroke font: 6 to 127 dot fonts		
Font Sizes		Standard font: Increase Width and Height up to 8 times. *2		
Text	8×8 dots	40 char. x 30 rows		
	8×16 dots	40 char. x 15 rows		
	16×16 dots	20 char. x 15 rows		
	32×32 dots	10 char. x 7 rows		
Touch Panel Type		Resistive Film (Analog)		
Touch Panel Resolution		1024 × 1024		
Internal Memory		FLASH EPROM 6MB*3		
Backup Memory		SRAM 128KB*4		
Control Memory	Variable Area	SRAM 64KB*4		
	Program Area	FLASH EPROM 132KB*5		
	Number of Step	15,000 steps *6		
Interface	Ethernet	IEEE802.3u、10BASE-T/100BASE-TX Connector: Modular Jack (RJ-45)×1	—	
	Serial	RS-232C / 422 / 485, Asynchronous Transmission, Data Length: 8 bit / 7 bit Stop Bit: 2 bit / 1 bit, Parity: Even / Odd / None, Data Transmission Speed: 2400bps-115.2kbps Connector: D-Sub 9pin plug		
	USB	USB 1.1 Connector: Type A x 1, Power Supply Voltage: DC5V ±5%, Output Current: 500mA (max.), Communication Distance: 5m (max.)		
	Control (DIO) DIO (Sink Type) (Model:LT3300■-■1-D24-K)	Sink / Source Input: 16 points, Sink Output: 16 points Connector: 38 pins		
	Control (DIO) DIO (Source Type) (Model:LT3300■-■1-D24-C)	Sink / Source Input: 16 points, Source Output: 16 points Connector: 38 pins		
	EX Module (EXT1)	To mount EX Module *7		
	AUX / Expansion Unit (EXT2)	To mount CANopen Master Unit *7		

General Specifications	
International Safety Standards	
Conforming Standards	UL508, ANSI / ISA-12. 12.01-2007, No.142-M1987, CSA-22.2 No.213-M1987, EN55011 Class A, EN61000-6-2, GOST-R, KCC
Input Voltage	DC24V
Rated Voltage	DC19.2 to 28.8V
Allowable Voltage	3ms or less
Power Consumption	27W or less
Voltage Endurance	AC 1000V 20mA for 1 minute (between charging and FG terminals)
Insulation Resistance	DC 500V 10MΩ or higher (between charging and FG terminals)
Surrounding Air Temperature	0 to 50 °C *8
Humidity	10 to 90%RH（No condensation, Wet bulb temperature:39°C or lower)
Storage Temperature	-20 to +60 °C
Storage Humidity	10 to 90%RH（No condensation, Wet bulb temperature:39°C or lower)
Pollution Degree	Pollution Degree 2
Atmosphere	Free of corrosive gasses
Air Pressure Resistance (Availment Altitude)	800 to 1114hPa (from sea level to 2,000m max)
Vibration Resistance	IEC61131-2 compliant 5 to 9 Hz single-amplitude 3.5 mm 9 to 150 Hz constant-accelerated velocity 9.8 m/s² X,Y,Z directions for 10 cycles (100 min.)
Noise Immunity (via nose simulator)	Noise Voltage: 1000Vp-p, Pulse Duration: 1μs, Rise Time: 1ns
Electrostatic Discharge Immunity	6kV（complies with IEC/EN61000-4-2 Level 3）
Grounding	Function: Type D (Common to SG-FG)
Ratings	Equivalent to IP65f NEMA#250TYPE4X/13 (Front surface at panel embedding) *9
External Dimensions	W167.5 [6.59] × H135 [5.31] × D78.0mm [3.07in.]（unit only）
Weight	1.0Kg [2.2lb] or less (unit only)
Cooling Method	Natural air circulation

*1 Korean, Simplified Chinese, Traditional Chinese, Cyrillic and Thai character support. For more information, see the operation environment for GP-Pro EX.
*2 Using the software, you can resize characters.
*3 User area.
*4 Service life of a lithium battery is 10 years or more at a battery ambient temperature of 40°C or less, 4.1 years or more at 50°C or les, or 1.5 years at 60°C or less. The backup period is about 100 days after the initial charge (fully charged), and about 6 days up to the end of battery life.
*5 Using Pro-face's Step counting method.
*6 Up to 60,000 steps can be made, but this reduces the capacity of the internal screen data memory by 1MB.
*7 EX Module and CANopen Master Unit cannot be used at the same time.
*8 Temperature in and around the panel. For STN color models, extended use in environments where the surrounding air temperature is 40°C or higher may degrade the display quality and could result in decreased contrast.
*9 Confirmed compatibility under conditions. This does not guarantee compatibility for all environments.

[External Dimensions/Interfaces]

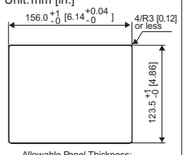
Unit: mm [in.]



LT-3301L does not support Ethernet Interface.
The maximum thickness when three EX modules are connected:123.0mm [4.84in.].

[Panel Cut-Out]

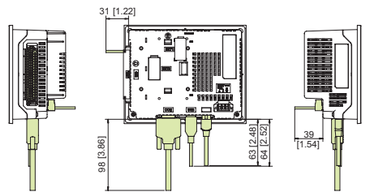
Unit: mm [in.]



Allowable Panel Thickness:
1.6 [0.06] to 5.0 [0.20]

[Cable Attached Dimensions]

Unit: mm [in.]



LT-3301L does not support Ethernet Interface.
Depending on type of connection cable used the dimensions shown above will change.
The dimensions given here are representative values and are intended for reference only.

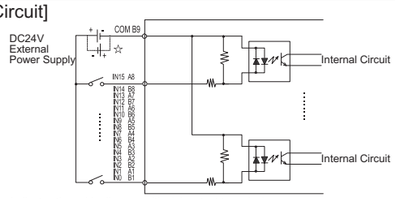
Input Specifications		
Rated Voltage		DC24V
Maximum Allowable Voltage		DC28.8V
Input Method		Sink / Source Input
Rated Current		6.5mA (DC24V) (IN0, IN2, IN4, IN6) 4.1mA (DC24V) (Other inputs）
Input Resistance		Approx.3.7kΩ(IN0, IN2, IN4, IN6) Approx.5.9kΩ(Other inputs)
Input Points		16
Common Lines		1
Common Design		16 points / 1 common line
Operation Range	ON Voltage	DC19V or more
	OFF Voltage	DC5V or less
Input Delay Time	OFF to ON	0.5 to 20ms *10
	ON to OFF	0.5 to 20ms *10
Input Signal Display		No LED indicators
Isolation Method		Photocoupler Isolation
External Connection		38-pin connector (used with Output section)
External Power Supply		For Signal: DC24V

Output Specifications		OUT0 to OUT3	OUT4 to OUT15
Rated Voltage		DC24V	
Allowable Voltage		DC20.4 to 28.8V	
Output Method	Sink Output	LT3300-S1-D24-K, LT3300-L1-D24-K, LT3301-L1-D24-K	
	Source Output	LT3300-S1-D24-C, LT3300-L1-D24-C, LT3301-L1-D24-C	
Maximum Load Voltage		200mA / 1 point 1.6A / 1 common	
Minimum Load Current		1mA	1mA (Pulse/PWM Output Unavailable)
Output Voltage Drop		DC0.5V or less	
Output Delay Time	OFF to ON	5μs or less (with output DC24V, 200mA)	0.5ms or less (with output DC24V, 200mA)
	ON to OFF	5μs or less (with output DC24V, 200mA)	0.5ms or less (with output DC24V, 200mA)
Voltage Leakage (When OFF)		0.1mA or less	
Clamp Voltage		39V ± 1V	
Type of Output		Transistor Output	
Common Lines		2	
Common Design		8 points / 1 common line × 2	
External Connection		38-pin connector (used with Input section)	
Output Protection Type		Output is unprotected	
Internal Fuse		3.5A,125V Chip fuse × 2 (not replaceable)	
Surge Control Circuit		Zener diode	
Output Points		16	
Output Signal Display		No LED indicators	
Isolation Method		Photocoupler Isolation	
External Power Supply		For Signal: DC24V	

High-speed Counter / Pulse Catch Input Specifications			
	High-speed Counter		Pulse Catch
Input	DC24V Open Collector		DC24V Open Collector
	Single phase (4 points)	Double phase (1 or 2 points)	
Input Points	CT0 (IN0), CT1 (IN2), CT2 (IN4), CT3 (IN6), User Defined	Use CT0 (IN0), CT1 (IN2) in pairs. CT0: Phase A, CT1: Phase B CT2 (IN4), CT3 (IN6) in pairs. CT2: Phase A, CT3: Phase B User Defined	IN0, IN2, IN4, IN6 User Defined
Minimum Pulse Width (Pulse Input)	10μs / 5μs 5μs		Input signal ON width 5μs or more
Count Speed (Rise, Fall Time)	t t t=1μs or less（100Kpps）		—
Phase	1 Phase	90 degree phase differential 2-phase signal / 1-phase +directional signal	—
High Speed Count Frequency	100Kpps	50Kpps	—
Count Edge Designation	Available	Not Available	—
Count Register	32-bit UP / DOWN Counter		—
Counter Mode Change	Set through software		—
Upper/Lower Limit Settings	Not Available		—
Preload/Prestrobe	Available		—
Marker Input (Clear Counter Value)	None	IN3,IN7	—

Pulse/PWM Output Specifications	Pulse	PWM
Output Points	4 points	
Output Method	PLS0 to PLS3 (OUT0 to OUT3) User Defined	PWM0 to PWM3 (OUT0 to OUT3) User Defined
Load Voltage	DC24V	
Minimum Load Current	1mA	
Maximum Output Frequency	Max.65kHz（set through software） Varies depending on the number of CH of High-speed counter, pulse output	
Pulse Acceleration	Available	Not Available
ON Duty	50%±10% (at 65kHz)*11	19 to 81% (at 65kHz)*12

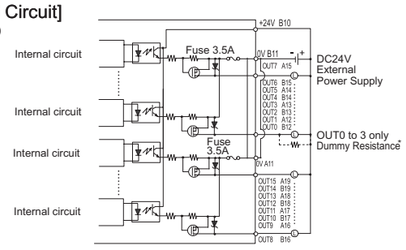
[Input Circuit]



☆Dotted area indicates the cable diagram with sink output type devices.

[Output Circuit]

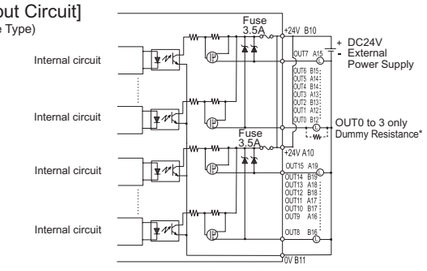
(Sink Type)



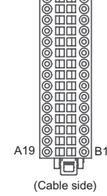
*For faster response with light load use an external dummy resistance.

[Output Circuit]

(Source Type)



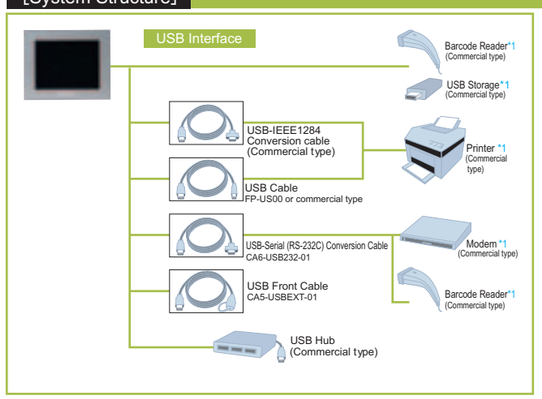
*For faster response with light load use an external dummy resistance.

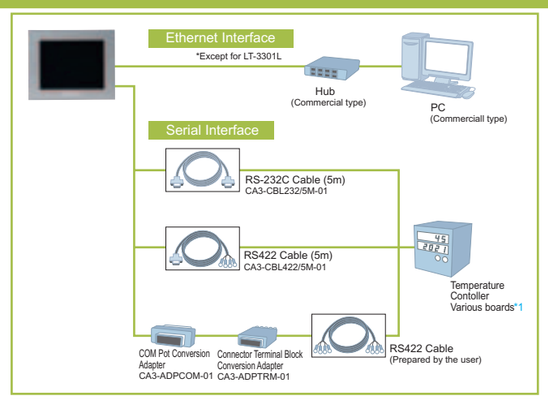
Pin Connection	Pin No.	Signal Name	Pin No.	Signal Name
	A1	IN1	B1	IN0 (CT0)
	A2	IN3	B2	IN2 (CT1)
	A3	IN5	B3	IN4 (CT2)
	A4	IN7	B4	IN6 (CT3)
	A5	IN9	B5	IN8
	A6	IN11	B6	IN10
	A7	IN13	B7	IN12
	A8	IN15	B8	IN14
	A9	NC	B9	COM
	A10	Sink output type: NC Source output type: +24V	B10	Sink output type: +24V Source output type: +24V
	A11	Sink output type: 0V Source output type: NC	B11	Sink output type: 0V Source output type: 0V
	A12	OUT1 (PLS1, PWM1)	B12	OUT0 (PLS0, PWM0)
	A13	OUT3 (PLS3, PWM3)	B13	OUT2 (PLS2, PWM2)
	A14	OUT5	B14	OUT4
	A15	OUT7	B15	OUT6
	A16	OUT9	B16	OUT8
	A17	OUT11	B17	OUT10
	A18	OUT13	B18	OUT12
	A19	OUT15	B19	OUT14

(Cable side)

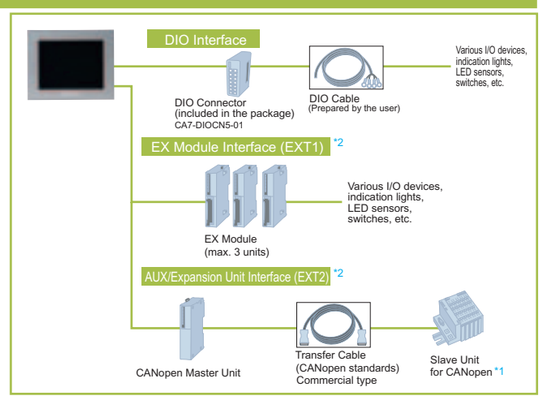
*10 Digital filter can be set intervals of 0.5ms.
*11 The ON duty error (10%) reduces as the output frequency setting is lower.
*12 ON duty (effective range) increases as the output frequency setting is lower.

[System Structure]

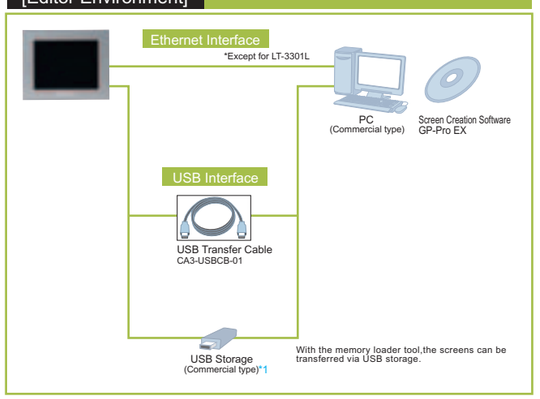

USB Interface
Barcode Reader*1 (Commercial type)
USB Storage*1 (Commercial type)
USB-IEEE1284 Conversion cable (Commercial type)
Printer *1 (Commercial type)
USB Cable FP-US00 or commercial type
USB-Serial (RS-232C) Conversion Cable CA6-USB232-01
Modem *1 (Commercial type)
USB Front Cable CA5-USBEXT-01
Barcode Reader*1 (Commercial type)
USB Hub (Commercial type)



For Isolation Unit, see manuals for system diagrams.


DIO Interface
DIO Connector (included in the package) CA7-DIOCN5-01
DIO Cable (Prepared by the user)
Various I/O devices, indication lights, LED sensors, switches, etc.
EX Module Interface (EXT1) *2
EX Module (max. 3 units)
Various I/O devices, indication lights, LED sensors, switches, etc.
AUX/Expansion Unit Interface (EXT2) *2
CANopen Master Unit
Transfer Cable (CANopen standards) Commercial type
Slave Unit for CANopen *1

[Editor Environment]


Ethernet Interface
*Except for LT-3301L
PC (Commercial type)
Screen Creation Software GP-Pro EX
USB Interface
USB Transfer Cable CA3-USBCB-01
USB Storage (Commercial type)*1
With the memory loader tool,the screens can be transferred via USB storage.

*1 For supported models, refer to Pro-face's support site "Otasuke Pro!"(http://www.pro-face.com/otasuke/).
*2 EX Module and Expansion unit cannot be used at the same time.

3.8" QVGA

LT-3201A

Monochrome Sink Output　Model：LT3201-A1-D24-K

Monochrome Source Output　Model：LT3201-A1-D24-C

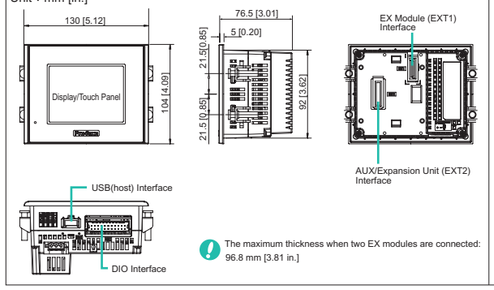
Performance Specifications		LT-3201A
Display Type		Monochrome Amber / Red LCD
Display Colors/Shades		Black and White (8 shades)
Backlight		Amber / Red LED (When replacement is required, contact your local distributor.)
Display Resolution		W320 × H240 pixels (QVGA)
Effective Display Area		78.8 [3.10] × 59.6mm [2.35in.]
Brightness Control		8 levels of adjustment available via touch panel
Contrast Adjustment		8 levels of adjustment available via touch panel
Language Fonts		Japanese: 6,962 (JIS Standards 1 & 2 including 607 non-kanji characters) ANK: 158 *1
Character Sizes		Standard font: 8×8, 8×16, 16×16, 32×32 dot fonts Stroke font: 6 to 127 dot fonts
Font Sizes		Standard font: Width and Height can be expanded up to 8 times.*2
Text	8×8 dots	40 Char. x 30 rows
	8×16 dots	40 Char. x 15 rows
	16×16 dots	20 Char. x 15 rows
	32×32 dots	10 Char. x 7 rows
Touch Panel Type		Resistive Film (Analog)
Touch Panel Resolution		1024 × 1024
Internal Memory		FLASH EPROM 6MB *3
Backup Memory		SRAM 128KB *4
Control Memory	Variable Area	SRAM 64KB *4
	Program Area	FLASH EPROM 132KB *5
	Number of Step	15,000 steps*6
Interface	Ethernet	—
	Serial	—
	USB	USB 1.1 Connector: Type A x 1, Power Supply Voltage: DC5V ±5%, Output Current: 500mA (max.), Communication Distance: 5m (max.)
	Control (Built-in DIO) Sink Output (Model: LT3201-A1-D24-K)	Sink / Source Input: 12 points, Sink Output: 6 points Connector: 22 pins
	Control (Built-in DIO) Source Output (Model: LT3201-A1-D24-C)	Sink / Source Input: 12 points, Source Output: 6 points Connector: 22 pins
	EX Module (EXT1)	To mount EX Modules *7
	AUX / Expansion Unit (EXT2)	To mount CANopen Master Unit *7

General Specifications	
International Safety Standards	
Conforming Standards	UL508, ANSI / ISA-12.12.01-2000, CSA-22.2 No.142-M1987, CSA-C22.2 No.213-M1987, EN55011 Class A, EN61000-6-2, GOST-R, KCC
Input Voltage	DC24V
Rated Voltage	DC19.2 to 28.8V
Allowable Voltage	10ms or less
Power Consumption	18W or less
Voltage Endurance	AC 1000V 20mA for 1 minute (between charging and FG terminals)
Insulation Resistance	DC 500V 10MΩ or higher (between charging and FG terminals)
Surrounding Air Temperature	0 to 50 °C *8
Ambient Humidity	10 to 90%RH（No condensation, Wet bulb temperature: 39°C or lower）
Storage Temperature	-20 to +60 °C
Storage Humidity	10 to 90%RH（No condensation, Wet bulb temperature: 39°C or lower）
Pollution Degree	Pollution Degree 2
Atmosphere	Free of corrosive gasses
Air Pressure Resistance (Availment Altitude)	800 to 1114hPa (from sea level to 2,000m max)
Vibration Resistance	IEC / EN61131-2 compliant 5 to 9 Hz single-amplitude 3.5 mm 9 to 150 Hz constant-accelerated velocity 9 8 m/s² X,Y,Z directions for 10 cycles (100 min.)
Noise Immunity (via noise simulator)	Noise Voltage: 1000Vp-p, Pulse Duration: 1μs, Rise Time: 1ns
Electrostatic Discharge Immunity	6kV (complies with IEC / EN61000-4-2 Level 3)
Grounding	Function: Type D (Common to SG-FG)
Ratings	Equivalent to IP65f NEMA#250TYPE4X/13 (Front surface at panel embedding) *9
External Dimensions	W130 [5.12] × H104 [4.09] × D76.5mm [3.01in.]（unit only）
Weight	1.0Kg [2.2lb] or less (unit only)
Cooling Method	Natural air circulation

*1 Korean, Chinese (Simplified) and Chinese (Traditional),Cyrillic and Thai character support. For more information, see the operation environment for GP-Pro EX.
*2 Using the software, you can resize characters.
*3 User area.
*4 Service life of lithium battery is 10 years or more at a battery ambient temperature of 40°C or less, 4.1 years or more at 50°C or less, 1.5 years at 60°C or less. The backup period is about 100 days after the initial charge (fully charged), and about 6 days up to the end of battery life.
*5 Using Pro-face's Step counting method.
*6 Up to 60,000 steps can be made, but this reduces the capacity of the internal screen data memory by 1MB.
*7 EX Module and CANopen Master Unit cannot be used at the same time.
*8 Temperature in and around the panel.
*9 Confirmed compatibility under conditions. This does not guarantee compatibility for all environments.

[External Dimensions / Interfaces]

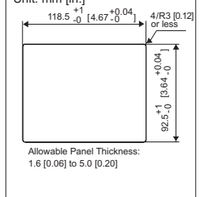
Unit：mm [in.]



The maximum thickness when two EX modules are connected: 96.8 mm [3.81 in.]

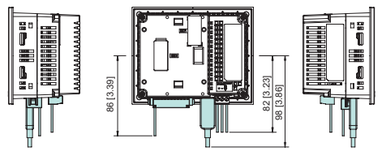
[Panel Cut-out]

Unit: mm [in.]



[Cable Attached Dimensions]

Unit: mm [in.]



Depending on type of connection cable used the dimensions shown above will change. The dimensions given here are representative values and are intended for reference only.

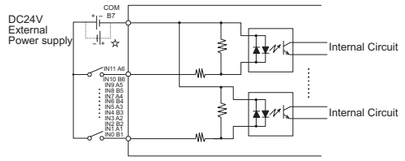
Input Specifications		
Rated Voltage		DC24V
Maximum Allowable Voltage		DC28.8V
Input Method		Sink / Source Input
Rated Current		6.5mA (DC24V) (IN0, IN2, IN4, IN6) 5mA (DC24V) (Other inputs)
Input Resistance		Approx.3.7kΩ(IN0, IN2, IN4, IN6) Approx.4.7kΩ(Other inputs)
Input Points		12
Common Lines		1
Common Design		12 points / 1 common line
Operation Range	ON Voltage	DC19V or more
	OFF Voltage	DC5V or less
Input Delay Time	OFF to ON	0.5 to 20ms *10
	ON to OFF	0.5 to 20ms *10
Input Signal Display		No LED indicators
Isolation Method		Photocoupler Isolation
External Connection		22-pin connector (used with Output section)
External Power Supply		For Signal: DC24V

Output Specifications			
		OUT0 to OUT3	OUT4 to OUT15
Rated Voltage		DC24V	
Allowable Voltage		DC20.4 to 28.8V	
Output Method	Sink Output	LT3201-A1-D24-K	
	Source Output	LT3201-A1-D24-C	
Maximum Load Voltage		200mA / 1 point, 1.2A / 1 common	
Minimum Load Current		1mA	1mA (Pulse / PWM Output Unavailable)
Output Voltage Drop		DC0 5V or less	
Output Delay Time	OFF to ON	5μs or less (with output DC24V, 200mA)	0.5ms or less (with output DC24V, 200mA)
	ON to OFF	5μs or less (with output DC24V, 200mA)	0.5ms or less (with output DC24V, 200mA)
Voltage Leakage (When OFF)		0.1mA or less	
Clamp Voltage		39V ± 1V	
Type of Output		Transistor Output	
Common Lines		1	
Common Design		6 points / 1 common line	
External Connection		22-pin connector (used with Input section)	
Output Protection Type		Output is unprotected	
Internal Fuse		2.5A, 125V Chip fuse (not replaceable)	
Surge Control Circuit		Zener diode	
Output Points		6	
Output Signal Display		No LED indicators	
Isolation Method		Photocoupler Isolation	
External Power Supply		For Signal: DC24V	

High-speed Counter / Pulse Catch Input Specifications			
Input	High-speed Counter: DC24V Open Collector		Pulse Catch: DC24V Open Collector
	Single phase (4 points)	Double phase (1 or 2 points)	
Input Points	CT0(IN0), CT1(IN2), CT2(IN4), CT3(IN6), User Defined	Use CT0 (IN0), CT1(IN2) in pairs. CT0: Phase A, CT1: Phase B CT2(IN4),CT3(IN6) in pairs. CT2: Phase A, CT3: Phase B User Defined	IN0, IN2, IN4, IN6 User Defined
Minimum Pulse Width (Pulse Input)	10μs, 5μs 5μs		Input signal ON width 5μs or more
Count Speed (Rise, Fall Time)	t=1μs or less (100Kpps)		—
Phase	1 Phase	90 degree phase differential 2-phase signal / 1-phase +directional signal	—
High Speed Count Frequency	100Kpps	50Kpps	—
Count Edge Designation	Available	Not Available	—
Count Register	32-bit UP / DOWN Counter		—
Counter Mode Change	Set through software		—
Upper / Lower Limit Settings	Not Available		—
Preload/Prestrobe	Available		—
Marker Input (Clear Counter Value)	None	IN3, IN7	—

Pulse / PWM Output Specifications		
	Pulse	PWM
Output Points	4 points	
Output Method	PLS0 to PLS3 (OUT0 to OUT3) User Defined	PWM0 to PWM3 (OUT0 to OUT3) User Defined
Load Voltage	DC24V	
Minimum Load Current	1mA	
Maximum Output Frequency	Max.65kHz（set through software） Varies depending on the number of CH of High-speed counter, pulse output	
Pulse Acceleration	Available	Not Available
ON Duty	50%±10% （at 65kHz） *11	19 to 81% (at 65kHz) *12

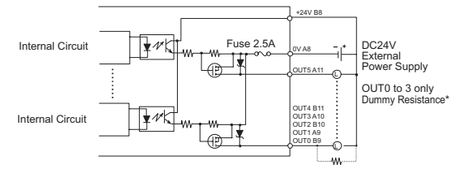
[Input Circuit]



☆ Dotted area indicates the cable diagram with sink output type devices.

[Output Circuit]

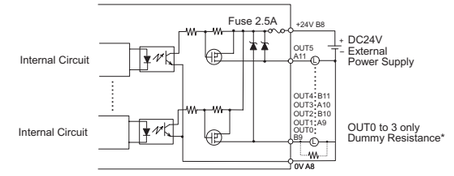
(Sink Type)



* For faster response with light load use an external dummy resistance.

[Output Circuit]

(Source Type)

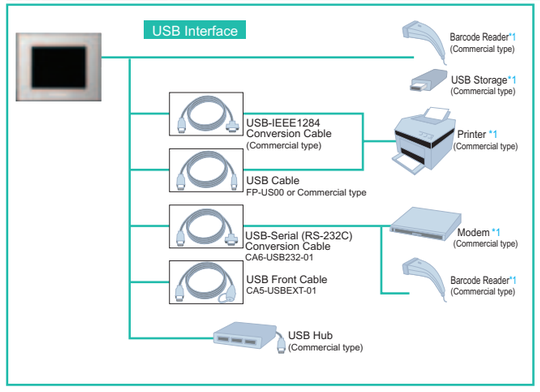


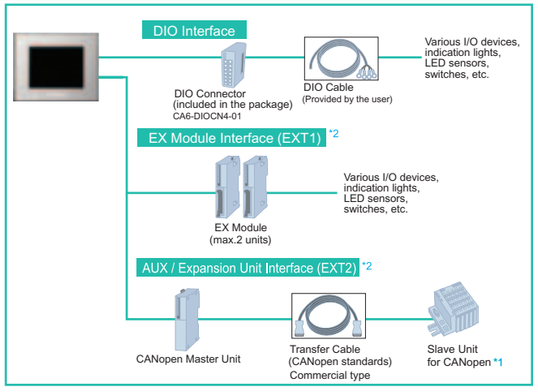
* For faster response with light load use an external dummy resistance.

Pin Connection	Pin No.	Signal Name	Pin No.	Signal Name
A1 B1 … A11 B11 (Cable Side)	A1	IN1	B1	IN0 (CT0)
	A2	IN3	B2	IN2 (CT1)
	A3	IN5	B3	IN4 (CT2)
	A4	IN7	B4	IN6 (CT3)
	A5	IN9	B5	IN8
	A6	IN11	B6	IN10
	A7	NC	B7	COM
	A8	0V	B8	+24V
	A9	OUT1 (PLS1, PWM1)	B9	OUT0 (PLS0, PMW0)
	A10	OUT3 (PLS3, PWM3)	B10	OUT2 (PLS2, PWM2)
	A11	OUT5	B11	OUT4

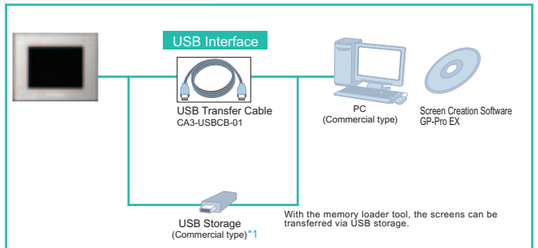
*10 Digital filter can be set intervals of 0.5ms.
*11 The ON duty error (10%) reduces as the output frequency setting is lower.
*12 ON duty (effective range) increases as the output frequency setting is lower.

[System Structure]


USB Interface
Barcode Reader*1 (Commercial type)
USB Storage*1 (Commercial type)
USB-IEEE1284 Conversion Cable (Commercial type)
Printer *1 (Commercial type)
USB Cable FP-US00 or Commercial type
USB-Serial (RS-232C) Conversion Cable CA6-USB232-01
Modem *1 (Commercial type)
USB Front Cable CA5-USBEXT-01
Barcode Reader*1 (Commercial type)
USB Hub (Commercial type)


DIO Interface
DIO Connector (included in the package) CA6-DIOCN4-01
DIO Cable (Provided by the user)
Various I/O devices, indication lights, LED sensors, switches, etc.
EX Module Interface (EXT1) *2
EX Module (max.2 units)
Various I/O devices, indication lights, LED sensors, switches, etc.
AUX / Expansion Unit Interface (EXT2) *2
CANopen Master Unit
Transfer Cable (CANopen standards) Commercial type
Slave Unit for CANopen *1

[Editor Environment]


USB Interface
USB Transfer Cable CA3-USBCB-01
PC (Commercial type)
Screen Creation Software GP-Pro EX
USB Storage (Commercial type) *1
With the memory loader tool, the screens can be transferred via USB storage.

*1 For supported models, refer to Pro-face's support site "Otasuke Pro!"(http://www.pro-face.com/otasuke/).　*2 EX Module and Expansion unit cannot be used at the same time.

[Input Module]

		EXM-DDI8DT	EXM-DDI16DT
Input Specification	Input Points	8 points (sink / source type-dual use)	16 points (sink / source type-dual use)
	Rated Input Voltage	DC24V	
	Rated Input Current	7.3mA / 1 point (DC24V)	
	Input Impedance	3.3kΩ	
	Isolation Method	Between input terminals and internal circuit: photocoupler isolated Between input terminals: not isolated	
	Input Delay Time	OFF-ON: 4ms ON-OFF: 4ms	
External Connection		10-pin terminal connector	
Status LED		LED is lighting when input is ON.	
Power Consumption *1		0.17W or less	0.27W or less
Weight		85g [0.19lb]	100g [0.2lb]

[Output Module]

			EXM-DRA8RT	EXM-DRA16RT	EXM-DDO8UT	EXM-DDO8TT	EXM-DDO16UK	EXM-DDO16TK
Output Specification	Output Points		8-point relay (a-connect)	16-point relay (a-connect)	8-point transistor (sink)	8-point transistor (source)	16-point transistor (sink)	16-point transistor (source)
	Rated Output Voltage		—		DC24V			
	Common Design		4 points / 1 common	8 points / 1 common	8 points / 1 common		16 points / 1 common	
	Maximum Load	1 point	2A or less		0.3A or less		0.1A or less	
	Voltage	1 common	7A or less	8A or less	3A or less		1A or less	
	Minimum Load Current		0.1mA / DC0.1V (reference value)		—			
	Electrical Life		100,000 operations or more (no load 1,800 operations/h)		—			
	Mechanical Life		20 milion operations or more (no load 18,000 operations/h)		—			
	Isolation Method		—		Between output terminals and internal circuit: photocoupler isolated Between output terminals: not isolated			
	Output Delay Time	ON	6ms or less		300µs or less			
		OFF	10ms or less		300µs or less			
	Voltage Leakage		—		0.1mA or less			
External Connection			11-pin terminal connector	10-pin terminal connector	10-pin terminal connector		MIL connector	
Status LED			LED is lighting when output is ON					
Power Consumption *1			1.16W or less	2.10W or less	0.55W or less		1.03W or less	
Weight			110g [0.24lb]	145g [0.32lb]	85g [0.19lb]		70g [0.15lb]	

[Input / Output Mixed Module]

			EXM-DMM8DRT
Input Specification	Input Points		4 points (sink / source type-dual use)
	Rated Input Voltage		DC24V
	Rated Input Current		7.3mA / DC24V
	Input Impedance		3.3kΩ
	Isolation Method		Between input terminals and internal circuit:photocoupler isolated Between input terminals: not isolated
	Input Delay Time		OFF—ON: 4ms ON—OFF: 4ms
Output Specification	Output Points		4-point relay (a-connect)
	Common Design		4 points / 1 common
	Maximum Load	1 point	2A or less
	Current	1 common	7A or less
	Minimum Load Current		0.1mA / DC0.1V
	Electrical Life		100,000 operations or more (no load 1,800 operations/h)
	Mechanical Life		20 million operations or more (no load 18,000 operations/h)
	Output Delay Time	ON	6ms or less
		OFF	10ms or less
External Connection			11-pin terminal connector
Status LED			LED is lighting when input is ON
Power Consumption *1			0.65W or less
Weight			95g [0.21lb]

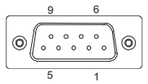
[Analog Module]

		EXM-AMI2HT	EXM-AMM3HT	EXM-ALM3LT	EXM-AMO1HT
Input Specification	Input Points	2 points			—
	External Connection	Terminal connector (by Phoenix Contact)			
	Input Type	Voltage (0-10V), Current (4-20mA)		Temperature Probes [Pt100], Thermocouple	—
	Resolution	12bit			—
	Input Value of LSB	2.5mV, 4µA		0.15°C (Temperature Probes [Pt100]) Type K 0.325°C Type J 0.300°C Type T 0.100°C	—
	Input Impedance	min.1MΩ(voltage input), 10Ω(current input)		min.1MΩ	—
	Isolation Method	Between input terminals and internal circuit: photocoupler isolated			—
	Sampling Time	20ms or lesss			—
	Total Input System Transfer Time	105ms + 1 scan time		200ms + 1 scan time	—
	Maximum Error	-1% of full scale			—
Output Specification	Output Points	—	1 point		
	Output Type	—	Voltage (0 - 10V), Current (4 - 20mA)		
	Resolution	—	12 bit		
	Output Value of LSB	—	2.5mV (Voltage output), 4µA (Current output)		
	Output Impedance	—	2kΩ or less (Voltage output), 300Ω or less (Current output)		
	Isolation Method	—	Photocoupler Isolution between input and internal circuit		
	Total Output System Transfer Time	—	50ms + 1 scan time	130ms + 1 scan time	50ms + 1 scan time
	Maximum Error	—	±1% of full scale		
External Connection		11-pin terminal connector			
Power Consumption *1		0.34W or less			
Weight		85g [0.19lb]			

[CANopen Master Unit]

Communication Type	1:N						
Connection Method	Multi-drop connection						
Communication Method	CSMA/NBA, half-duplex serial communication						
Transfer Speed / Communication Distance	Baud Rate *2	1,000kbps	800kbps	500kbps	250kbps (Factory Settings)	125kbps	50kbps
	Bus Length	20m	40m	100m	250m	500m	1000m
Number of Stations	Max.63 stations, Bit variable input: 512, Bit variable output: 512, Integer variable input: 128, Integer variable output: 128						
Field bus interface	D-Sub 9-pin plug						
Status LED	PWR (green) ON: The power turns ON, OFF: The light is OFF RUN (green): The light is ON or blinks when communication is enabled. ERR(Red): The light is ON or blink when the connected slave has an error.						
Power Consumption *1	2.4W or less						
Weight	500g [1.1lb] or less						

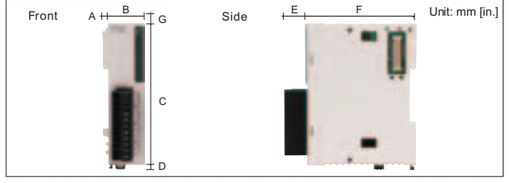
[CANopen Pin Connections]

Pin Connection		Signal Name	Description
	1	—	
	2	CAN_L	CAN_L Bus Line
	3	CAN_GND	CAN Ground
	4	—	
	5	—	
	6	—	
	7	CAN_H	CAN_H Bus Line
	8	—	
	9	—	

CANopen Master Unit Side
(D-Sub 9 pin plug)

[External Dimensions]

	A	B	C	D	E	F	G
EXM-DDI16DT	3.8 [0.15]	23.5 [0.93]	90 [3.54]	4.5 [0.18] *3	14.6 [0.57]	70 [2.76]	—
EXM-DDI8DT							
EXM-DRA8RT							
EXM-DRA16RT							
EXM-DDO8UT							
EXM-DDO8TT							
EXM-DMM8DRT							
EXM-AMI2HT							
EXM-ALM3LT							
EXM-AMM3HT							
EXM-AMO1HT							
EXM-DDO16UK		17.6 [0.69]			11.3 [0.44]		
EXM-DDO16TK							
CA8-CANLT-01	5.5 [0.22]	23.5 [0.93]		4.5 [0.18]	—*4	71 [2.80]	6 [0.24] *5



*1 DC5V supplied by LT3000 unit. *2 Configure the baud rate via software. *3 Length of the hooks when pulled out is 8.5mm [0.33in.]. *4 CANopen Master Unit Interface is at the bottom of the unit. *5 Length of the hooks when pulled out is 12.1mm [0.48in.].

[Option Item List]

" ** " is changed with the version of software.

			Product Name	Model	Description	
Software	1		GP-Pro EX	EX-ED-V**	Screen-creation software	
			GP-Pro EX Editor License	EX-ED-LICENSE-V**	GP-Pro EX editor license *6	
	2		Pro-Server EX Developer	EX-SDV-V**	For 5.7" *7	Software that connects a PC to a LT via Ethernet and collects and transmits data *8
			Pro-Server EX Developer License	EX-SED-LICENSE	For 5.7" *7	Pro-Server EX developer license *9
			Pro-Server EX Runtime License	EX-SRT-LICENSE	For 5.7" *7	Pro-Server EX Runtime license *10
			MES Action License	EX-MES-LICENSE-V**	For 5.7" *7	License key permitting Pro-Server EX to access a database
Option Items	3	Cable	USB Transfer Cable (2m)	CA3-USBCB-01	USB cable for transferring data such as screen data (host to host)	
	4		USB Cable (5m)	FP-US00	Connects a USB peripheral unit. (host to slave)	
	5		USB Front Cable (1m)	CA5-USBEXT-01	The cable for extending the LT s USB port	
			USB-Serial (RS-232C) Conversion Cable (50cm)	CA6-USB232-01	The conversion cable for using a LT's USB I/F as the Serial (RS-232C) I/F. Connects a Modem only for the RS-232C communication method.	
	6		RS-232C Cable (5m)	CA3-CBL232/5M-01	For 5.7"	Interface cable for communication between a temperature controller/various boards and the LT series via RS-232C.
	7		RS-422 Cable (5m)	CA3-CBL422-01	For 5.7"	Interface cable for communication between a temperature controller/various boards and the LT series via RS-422.
	8		RS-422 Cable (5m)	CA3-CBL422/5M-01	For 5.7"	Interface cable for communication between a temperature controller/various boards and the LT series via RS-422. <for a unit of terminal resistance 100 Ω>
	9	Adapter	COM Port Conversion Adapter	CA3-ADPCOM-01	For 5.7"	Pin assign conversion adapter connects optional RS-422 communication items to LT-3300 series unit s COM1 port.
	10		Terminal Connector Conversion Adapter	CA3-ADPTRM-01	For 5.7"	Conversion adapter converts a COM port to RS-422 terminal block.
			RS-232C Isolation Unit	CA3-ISO232-01	For 5.7"	Unit for providing isolated connection between a temperature controller/various boards and the LT series. RS-232C and RS-422 are switchable.
	11	EX Module	8-Point Input Module	EXM-DDI8DT	8-point sink-source shared expansion unit	
			8-Point Relay Output Module	EXM-DRA8RT	8-point relay output / 2-point common type expansion unit	
			8-Point Sink Output Module	EXM-DDO8UT	8-point transistor output sink type expansion unit	
			8-Point Source Output Module	EXM-DDO8TT	8-point transistor output source type expansion unit	
	12		16-Point Input Module	EXM-DDI16DT	16-point sink-source shared expansion unit	
			16-Point Relay Output Module	EXM-DRA16RT	16-point relay output / 2-point common type expansion unit	
	13		16-Point Sink Output Module	EXM-DDO16UK	16-point transistor output sink type expansion unit	
			16-Point Source Output Module	EXM-DDO16TK	16-point transistor output source type expansion unit	
	14		4-Point Input / 4-Point Relay Output Module	EXM-DMM8DRT	4-point input sink-source / 4-point relay output / 1 common mixed I/O unit	
	15		2-ch Analog Input Module	EXM-AMI2HT	2-ch analog input type expansion unit	
			Thermocouple (Pt100 Input) / 1-ch Analog Output Module	EXM-ALM3LT	2-ch temperature input / 1-ch analog output type expansion unit	
			2-ch Analog Input / 1-ch Analog Output Module	EXM-AMM3HT	2-ch analog input / 1-ch analog output expansion unit	
			1-ch Analog Output Module	EXM-AMO1HT	1-ch analog output type expansion unit	
	16		CANopen Master Unit	CA8-CANLT-01	Master unit to connect to a slave unit supporting CANopen	
	17		CANopen Slave HTB Unit	HTB1C0DM9LP	Slave unit supporting CANopen with 12 digital inputs, 6 relay outputs and 2 transistor source outputs. Up to 7 units of EX modules can be connected.	
			Screen Protection Sheet	CA3-DFS6-01	For 5.7"	Disposable, dirt-resistant sheet for the LT unit s screen (5 pcs/set)
				CA6-DFS4-01	For 3.8"	
			Environmentally-resistant Cover	CA4-DCMDL-01	For 5.7"	Regarding grease and chemical application, do not remove the unit, simply replace the environmental protection cover (5 pcs/set)
			Panel Cutout Adapter	CA4-ATM5-01	For 5.7"	Attachment required for installing a 5.7-inch display unit in the mounting hole of LT Series (GLC150).

Please purchase when the product is damaged or lost.

			Product Name	Model	Description	
Maintenance Items			Installation Gasket	CA3-WPG6-01	For 5.7"	Sheet for protecting the front of the display unit from fingerprints, water droplets, powders, dust, and oil mist
				ST400-WP01	For 3.8"	
			USB Cable Clamp	CA7-USBAT-01	For 5.7"	USB cable clamp to prevent disconnection (5 pcs/set)
				CA5-USBATL-01	For 3.8"	
			DC Power Supply Connector	CA5-DCCNM-01	Connector for attaching power supply to power cable (5 pcs/set)	
			Installation Fastener	CA3-ATFALL-01	Installation fasteners for (4 pcs/set)	
			DIO Connector	CA7-DIOCN5-01	For 5.7"	Connector attached to DIO interface connects an external I/O devices. (5 pcs/set)
				CA6-DIOCN4-01	For 3.8"	
			MIL Connector (20-pins) for EX module	CA6-EXMCNHE20P-01	Connector for EX module (5 pcs/set)	
			Terminal Connector (10-pins) for EX module	CA6-EXMCNRS10P-01		
			Terminal Connector (11-pins) for EX module	CA6-EXMCNRS11P-01		
			EX Module Securing Hook	CA7-FIXEXM-01	For 5.7"	Hook for securing three EX Modules (5 pcs/set)
			DIO Connector for HTB	CA7-HTBCNSET-01	13-pin input connector and 16-pin output connector for HTB (each in one set)	

*6 Purchase this product when installing GP-Pro EX in a second or subsequent PC. One license is required for each PC.
*7 Only for units with Ethernet.
*8 Includes the settings editor and Run time.
*9 Purchase this product when installing the settings editor and Run time in subsequent PCs.
*10 Purchase this license when installing only Run time in subsequent PCs. One license is required for each PC.

Pictures of Options

1 GP-Pro EX

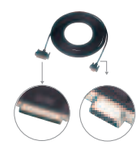
2 Pro-Server EX

3 USB Transfer Cable

4 USB Cable

5 USB Front Cable

6 RS-232C Cable

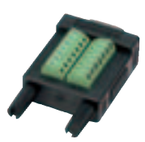


7 RS-422 Cable

8 RS-422 Cable

9 COM Port Conversion Adapter

10 Terminal Block Conversion Adapter



11 8-Point Input Module
8-Point Relay Output Module

12 16-Point Input Module
16-Point Relay Output Module

13 16-Point Sink Output Module
16-Point Source Output Module

14 Input / Output Module

15 Analog Module

16 CANopen Master Unit

17 CANopen Slave HTB Unit

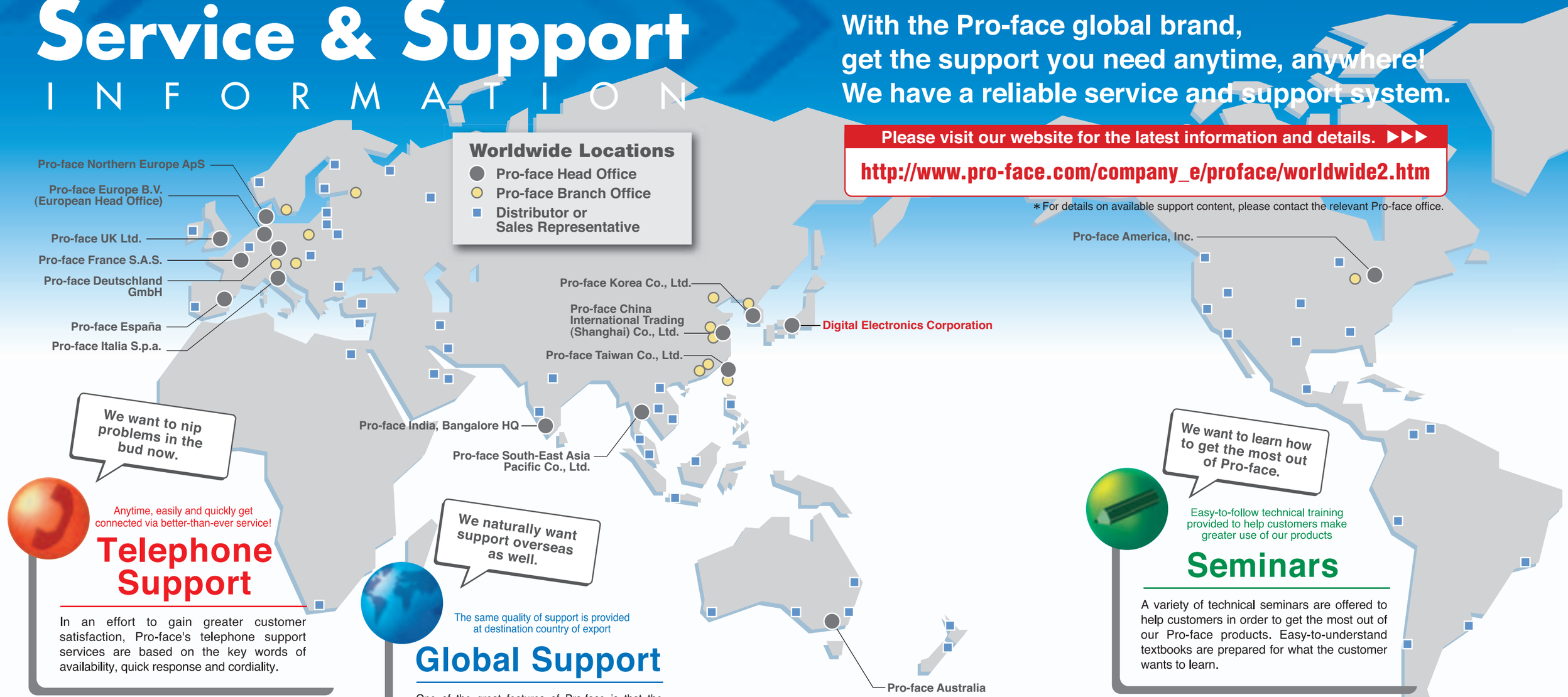
Service & Support
I N F O R M A T I O N

**With the Pro-face global brand,
get the support you need anytime, anywhere!
We have a reliable service and support system.**

Please visit our website for the latest information and details. ▶▶▶

http://www.pro-face.com/company_e/proface/worldwide2.htm

＊For details on available support content, please contact the relevant Pro-face office.



We want to nip problems in the bud now.

Anytime, easily and quickly get connected via better-than-ever service!

Telephone Support

In an effort to gain greater customer satisfaction, Pro-face's telephone support services are based on the key words of availability, quick response and cordiality.

We naturally want support overseas as well.

The same quality of support is provided at destination country of export

Global Support

One of the great features of Pro-face is that the same high level of customer support is available in countries where the product is exported to. Overseas customers can receive high quality support in both telephone inquiries and repair services.

We want to learn how to get the most out of Pro-face.

Easy-to-follow technical training provided to help customers make greater use of our products

Seminars

A variety of technical seminars are offered to help customers in order to get the most out of our Pro-face products. Easy-to-understand textbooks are prepared for what the customer wants to learn.

We want to make better screens in an easier way.

Expanded "Otasuke Pro!"support site
Upgraded handy screen samples

Web Support

The content of our "Otasuke Pro!" support site has been upgraded with services aimed at reducing development man-hours at customer by fulfilling contents such as Q&A and manual downloads.

Safety Standard Certificates RoHS Compliance

Anytime Anywhere

Web Download Service

Easily find individual product certifications and quickly obtainthe necessary documentation for customs, safety inspections, and insurance.

We want Pro-face products fixed promptly.

Should trouble occur, it can be fixed swiftly without incurring process loss!

Repair Services

Pro-face has eliminated loss throughout the entire process from providing quotation to customer, repair, and return delivery. We are constantly re-evaluating our systems to ensure satisfaction for all of our customers.

We want manuals that even beginners can understand.

Efforts to ensure anyone and everyone can understand how to use Pro-face products

Manuals

So that even beginners can use products immediately, We aim to make manuals easy-to-understand. We have already received high reviews from many customers in a survey on satisfaction.

Worldwide Locations

Our Environmental Policy and Compliance with the RoHS Directive

Pro-face has taken significant steps to meet increasingly stringent requirements for environmental preservation and has sought to comply with the RoHS Directive by adopting measures to eliminate specified harmful substances from existing products and products to be manufactured and sold beginning in 2006. For details, please refer to our web site or contact our sales office in your country.

ACCESS!!

www.proface.com

Worldwide Contacts:
http://www.pro-face.com/worldwide/

Conformance with International Safety Standards

Pro-face products and component parts bearing the CE Mark and the UL or c-UL Listing and Recognized Component Marks are your guarantees of compliance with safety standards accepted in countries and regions worldwide.

Caution: Before operating any of these products, be sure to read all related manuals thoroughly.

- For printing purposes, the colors in this catalog may differ from those of the actual unit.
- LCD screens may exhibit minute grid-points (light and dark) on the Display Panel surface. "Contouring" - where some parts of the screen are brighter than others, producing a wavelike pattern - may occasionally occur. Both are normal for an LCD display and are not defects.
- Actual user screens may differ from the screens shown here.
- All product names used in this catalog are the registered trademarks or trademarks of their respective companies.
- All information contained in this catalog is subject to change without notice.

Pro-face
Human Machine Interface

Pro-face is a registered trademark of Digital Electronics Corporation in Japan, U.S.A., Canada, Europe and other areas and countries.

©2010.11 Digital Electronics Corporation. All Rights Reserved.

Global Head Office
Digital Electronics Corporation
Osaka, JAPAN
Tel: +81 (0)6 6613 3116
Fax: +81 (0)6 6613 5888
http://www.pro-face.com
info@pro-face.com

North/South American Head Office
Pro-face America, Inc.
Saline, MI U.S.A.
Tel: +1 734 429 4971
Fax: +1 734 429 1010
http://www.profaceamerica.com
sales.info@profaceamerica.com

European Head Office
Pro-face Europe B.V.
Hoofddorp, THE NETHERLANDS
Tel: +31 (0)23 55 44 099
Fax: +31 (0)23 55 44 090
http://www.proface.com
info@proface.com

Australia and New Zealand
Pro-face Australia
Melbourne, AUSTRALIA
Tel: +61 (0)3 9550 7395
Fax: +61 (0)3 9550 7390
http://www.pro-face.com.au http://www.pro-face.co.nz
pfau@pro-face.com

South-East Asia Pacific
Pro-face South-East Asia Pacific Co.,Ltd.
Bangkok, THAILAND
Tel: +66 (0)2 617 5678
Fax: +66 (0)2 617 5688
http://www.proface.co.th
support@proface.co.th

Austria
Pro-face Europe B.V.(Austria Office)
Hagenberg, AUSTRIA
Tel: +43 7236 3343-620
FAX: +43 7236 3343-629
http://www.pro-face.at
office@pro-face.at

France
Pro-face France S.A.S.
Mitry-Mory, FRANCE
Tel: +33 (0)1 60 21 22 91
Fax: +33 (0)1 60 21 22 92
http://www.proface.fr
info@proface.fr

Germany
Pro-face Deutschland GmbH
Solingen, GERMANY
Tel: +49 (0)212 258 260
Fax: +49 (0)212 258 2640
http://www.pro-face.de
sales@pro-face.de

Poland
Pro-face Europe B.V.(Warsaw Office)
Warzawa, POLAND
Tel/FAX:+48 (22) 465-66-62
http://www.proface.pl/
proface@proface.pl

Scandinavia, Baltic Countries
Pro-face Northern Europe ApS
Roskilde, DENMARK
Tel: +45 70 22 01 22
Fax: +45 70 22 01 33
http://www.pro-face-eu.net/
info@pro-face.dk

Switzerland
Pro-face Deutschland GmbH
Regensdorf, SWITZERLAND
Tel: +41 (0)43 343 7272
Fax: +41 (0)43 343 7279
http://www.pro-face.ch
info@pro-face.ch

United Kingdom
Pro-face UK Ltd
Coventry, ENGLAND
Tel: +44 (0)2476 511288
Fax: +44 (0)2476 511499
http://www.profaceuk.com
info@profaceuk.com

China
Pro-face China International Trading (Shanghai) Co., Ltd.
Shanghai, P. R. CHINA
Tel: +86 (0)21 6361 5175
Fax: +86 (0)21 6361 5176
http://www.proface.com.cn
proface@proface.com.cn

South Korea
Pro-face Korea Co., Ltd.
Seoul, SOUTH KOREA
Tel: +82 (0)2 2630 9850
Fax: +82 (0)2 2630 9860
http://www.proface.co.kr
support@proface.co.kr

Taiwan
Pro-face Taiwan Co., Ltd.
Taipei, TAIWAN
Tel: +886 (0)2 2657 1121
Fax: +886 (0)2 2657 1021
http://www.proface.com.tw
proface@proface.com.tw

Spain and Portugal
Pro-face Espa a
Cardedeu (Barcelona), SPAIN
Tel: +34 (0)93 846 07 45
Fax: +34 (0)93 845 48 68
http://www.pro-face.es
central@pro-face.es

Russia
Pro-Face Northern Europe ApS (Saint-Petersburg office)
Saint-Petersburg, RUSSIA
Tel: +007 (812) 336-47-06
Fax: +007 (812) 336-47-18
http://www.pro-face.ru
info@pro-face.ru

Italy
Pro-face Italia S.p.a.
Bovisio Masciago (Milano), ITALY
Tel: +39 0362 59 96 1
Fax: +39 0362 59 96 69
http://www.proface.it
info@proface.it

Sweden
Pro-face Sweden AB
L ddek pinge (Malm), SWEDEN
Tel: +46 46 540 90 70
Fax: +46 46 71 27 90
http://www.pro-face-eu.net
info@pro-face.se

DS/DS0807-LT3000ALL-03cE06